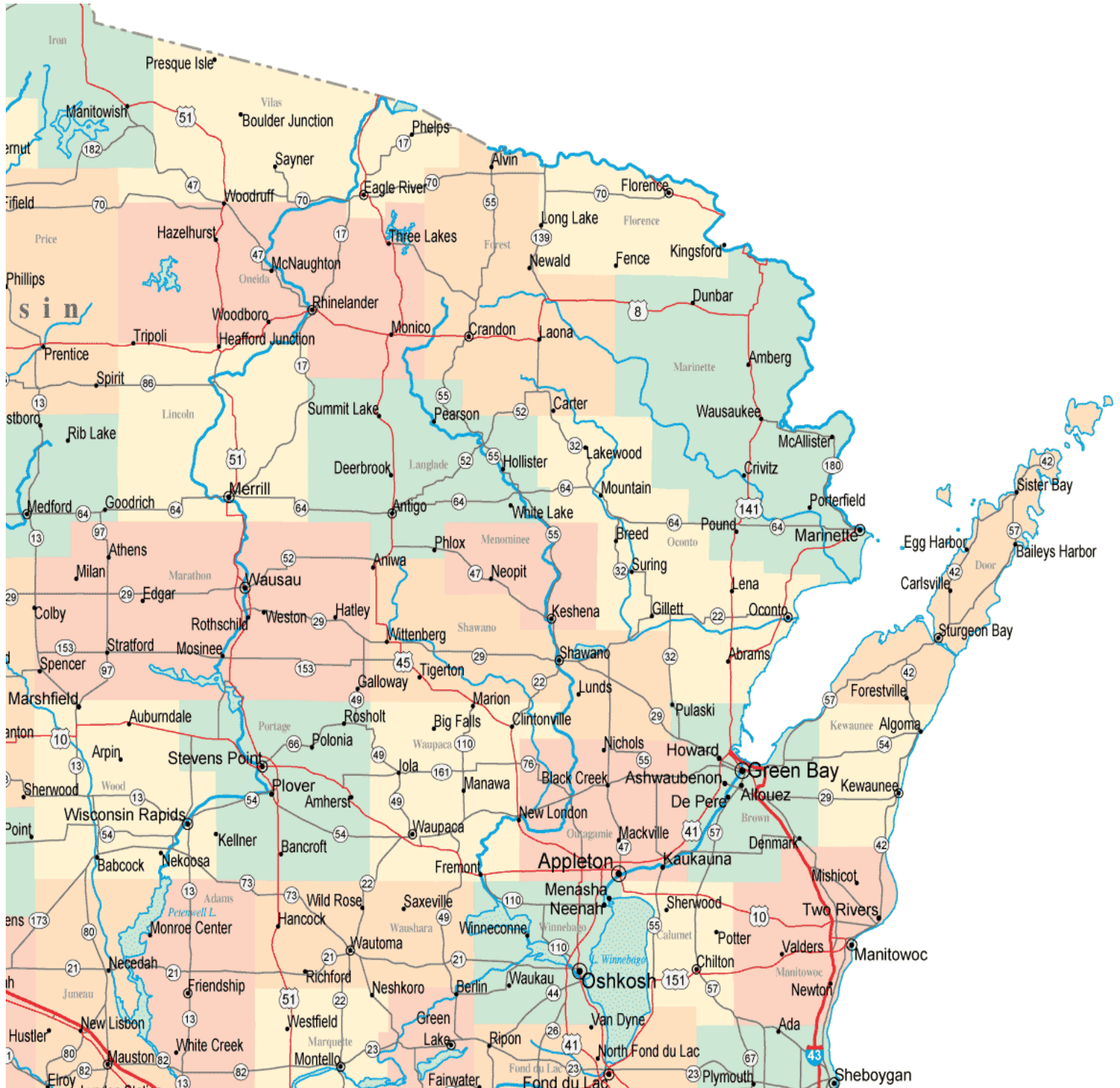


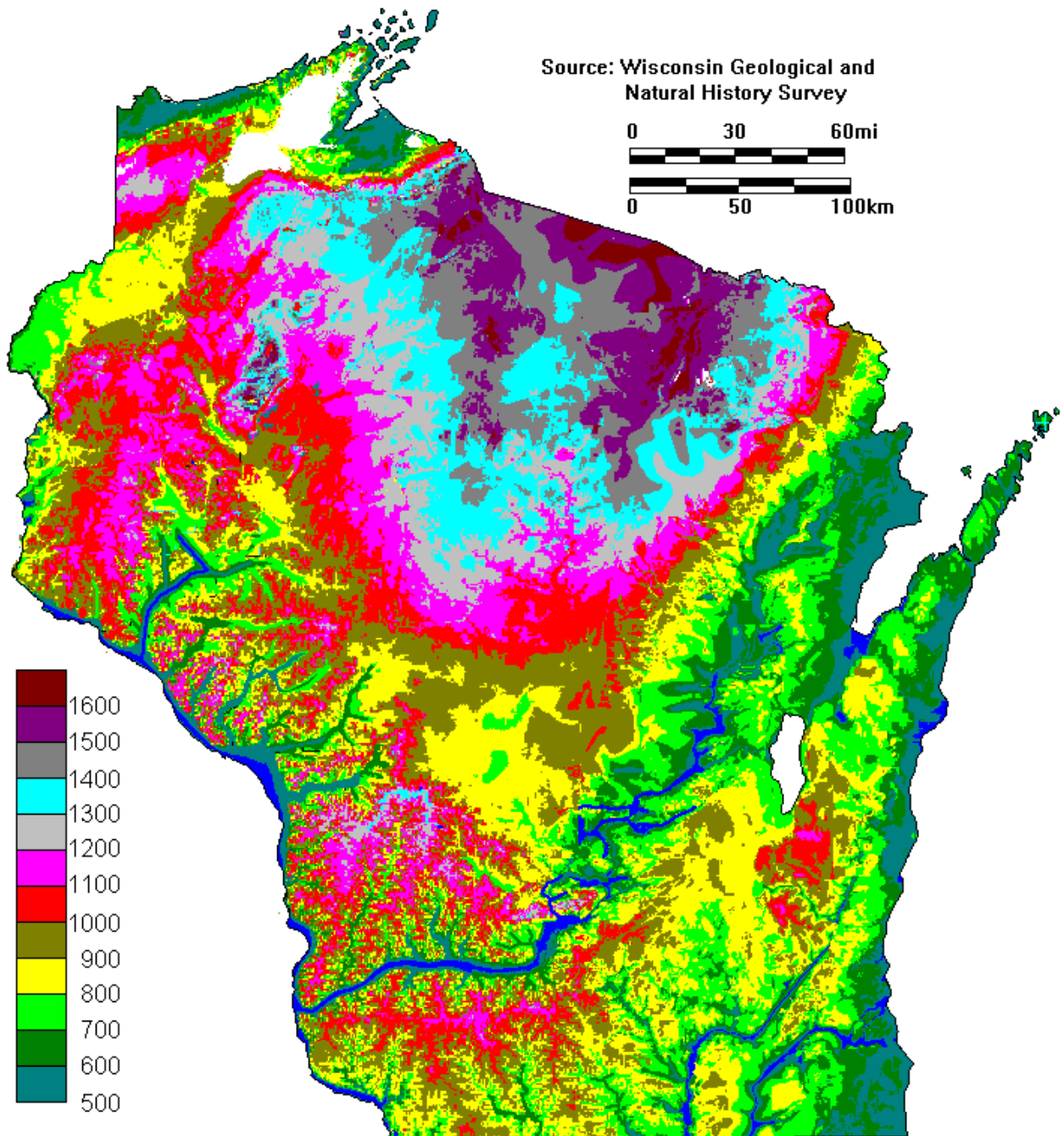
# 2010S TORNADO GUIDE

## FOR NORTH CENTRAL AND NORTHEAST WISCONSIN



# 2010S TORNADO GUIDE

## FOR NORTH CENTRAL AND NORTHEAST WISCONSIN



# **2010S TORNADO GUIDE**

## **FOR NORTH CENTRAL AND NORTHEAST WISCONSIN**

**BROWN**

**MENOMINEE**

**CALUMET**

**OCONTO**

**DOOR**

**ONEIDA**

**FOREST**

**OUTAGAMIE**

**FLORENCE**

**PORTAGE**

**KEWAUNEE**

**SHAWANO**

**LANGLADE**

**VILAS**

**LINCOLN**

**WAUPACA**

**MANITOWOC**

**WAUSHARA**

**MARATHON**

**WINNEBAGO**

**MARINETTE**

**WOOD**

# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

EVENT	F / EF	DATE			TIME		TOR IN GRB SERVICE AREA
#	RANK	MONTH	DAY	YEAR	(LST)	DIRECTION / LOCATION	COUNTY OR COUNTIES
1	1	5	4	2010	1810-1812	2.7 SE Zittau to 2.7 W Winchester	Winnebago
2	0	5	4	2010	1813-1817	2.2 SW Winchester to 0.8 NNW Larsen	Winnebago
3	0	7	14	2010	1618-1619	2.5 WSW Veedum – 2.2 WSW Veedum	Wood
4	1	8	20	2010	1520-1522	2 SE- 2.7 ESE Greenleaf	Brown
5	3	4	10	2011	1708-1741	2 N Hamburg – 1 SW Bloomville	Marathon, Lincoln
6	1	4	10	2011	1735-1742	2 NW Coloma – 4 ESE Hancock	Adams, Waushara
7	1	4	10	2011	1750-1758	5 S Parrish	Langlade
8	1	4	10	2011	1806-1843	1 SW Saxeville – 1 SE Hortonville	Waushara, Waupaca, Outagamie
9	2	4	10	2011	1830-1846	3 SE Argonne – 6 SE Long Lake	Forest, Florence
10	1	4	10	2011	1853-1904	0.3 N Poy Sippi – 2.3 WSW Winchester	Waushara, Winnebago
11	1	4	10	2011	1903-1908	4.2 WNW – 3.2 N Armstrong Creek	Forest
12	2	4	10	2011	1943-1946	1.2 SW Kaukauna – 0.3 S Little Chute	Outagamie
13	1	4	10	2011	1953-1955	1.2 NNE Askeaton – 1.4 S Greenleaf	Brown
14	1	4	10	2011	1959-2001	1.6 NW Quinney – 1.5 SSE Stockbridge	Calumet
15	0	5	22	2011	1805	5 NE Algoma (waterspout)	Kewaunee
16	1	5	22	2011	1703-1720	5.5 SSE Cranmoor – 4.8 SE Arnott	Wood, Portage
17	1	8	19	2011	1545-1556	2.9 NW – 5.2 ESE Wausaukee	Marinette
18	0	8	23	2011	1658	0.3 NW Arpin	Wood
19	0	8	23	2011	1756-1757	0.9 – 1.1 SE Briarton	Shawano
20	0	8	23	2011	2005-2006	0.8 NNE – 1.3 E Sherwood	Calumet
21	0	5	24	2012	1801-1807	3.7 SSE – 4.8 ENE Marathon	Marathon
22	0	8	9	2012	1210-1220	6 S Kewaunee	Kewaunee
23	0	8	9	2012	1225-1235	6 S Kewaunee	Kewaunee
24	0	9	18	2012	1701	3 W Sister Bay	Door
25	0	7	9	2013	1359-1404	0.5 NE Schultz - 3.9 W Bloomville	Lincoln
26	0	7	9	2013	1432-1456	10.8 S Parrish - 3.1 W Deerbrook	Langlade
27	0	7	9	2013	1644-1645	4.2 S Bancroft	Portage
28	0	7	9	2013	1850-1854	4.4 NNE Oconto to 5.2 NNE Oconto	Oconto
29	1	8	6	2013	2322-2333	4 NNE Partridge - 0.8 WSW Hortonville	Waupaca, Outagamie
30	2	8	6	2013	2324-2333	1.2 W New London - 0.4 WSW Greenville	Waupaca, Outagamie
31	1	8	6	2013	2338-2353	0.4 SE Mackville - 2.7 W Morrison	Outagamie, Brown
32	1	8	6	2013	2338-2352	3.5 E Greenville - 2.6 NNE Brillion	Outagamie, Brown, Calumet
33	1	8	6	2013	2340-0010	2.7 ENE Mackville – 1.1 NNE Larrabee	Outagamie, Brown, Manitowoc
34	1	8	6	2013	0005-0010	0.5 SSE Henrysville – 1 NE Stangelville	Brown, Calumet, Kewaunee
35	0	7	27	2014	1805	3.5 SE Oshkosh Wittman Field (waterspout)	Winnebago
36	0	8	18	2014	1523-1525	3.3 NE Winchester – 4.0 NNE Larsen	Winnebago

# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

[illegible]

# **2010S TORNADO REFERENCE GUIDE**

## **GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS**

### **Event 1: May 4, 2010**

The F/EF-1 tornado touched down 2.7 miles southeast of Zittau in Winnebago County around 6:10 pm CST. The tornado was 100 yards wide and travelled seven tenths of a mile before it dissipated 2.7 miles west of Winchester at 6:12 pm CST. The tornado snapped numerous pine trees in a wooded area and threw a gazebo into the side of a house. The tornado also destroyed a 100 year old barn.

### **Event 2: May 4, 2010**

The F/EF-0 tornado touched down 2.2 miles south southwest of Winchester in Winnebago County at 6:13 pm CST. The tornado was 100 yards wide and travelled 3.4 miles before dissipating 0.8 miles north northwest of Larsen at 6:17 pm CST. The tornado damaged several structures. It destroyed a shed, swirling 2 by 4's in the air. The 2 by 4's struck a house, damaging the roof. The tornado threw a trailer about 200 yards into a field and ripped siding off a garage. A small camper was knocked over.

### **Event 3: July 14, 2010**

The F/EF-0 tornado touched down 2.5 miles west southwest of Veedum in Wood County at 4:18 pm CST. The tornado travelled a quarter of a mile and was 50 yards wide before it dissipated 2.2 miles west southwest of Veedum. The brief tornado was reported by the public and confirmed by local emergency management about 5 miles west of Pittsville. A dozen trees were knocked down and several large tree limbs fell onto a house. Wind speed estimated at 80 mph.

### **Event 4: August 20, 2010**

The F/EF-1 tornado touched down 2 miles southeast of Greenleaf in Brown County at 3:20 pm CST. The tornado travelled just over 1.25 miles and was 75 yards wide before dissipating 2.7 ESE of Greenleaf at 3:22 pm CST. When the tornado initially touched down, several trees were snapped and uprooted. The tornado then destroyed a relatively new barn constructed of metal wall panels and roof. Pieces of the roof and wall were strewn over 100 yards from the site. About 50 to 100 yards on either side of the damaged barn small outbuildings and trees were untouched. The tornado continued east-northeast to another farm and heavily damaged a metal building which contained hay bales. Large parts of the metal roof were thrown over 200 yards. Numerous trees along the patch were snapped or uprooted. Estimated maximum winds were 90 mph. The tornado dissipated just north of the Holland State Wildlife Area.

### **Event 5: April 10, 2011**

The F/EF-3 tornado developed about 2 miles north of Hamburg at 5:08 CST pm and moved northeast into Lincoln County at 5:10 pm CST. Pine trees were uprooted and large branches were broken in the path of the storm. One house sustained damage to its siding and several barns were blown down or lost their roofs in Marathon County. The tornado was rated an F/EF-0 in Marathon County. The average width of the tornado in Marathon County was 100 yards. The tornado reached F/EF-3 intensity on the north side of Merrill in Lincoln County at approximately 5:22 pm CST where 22 homes and 7 businesses were destroyed. Several homes lost nearly all exterior and some interior walls. In addition, 22 homes and one business sustained major damage, and 20 homes and four businesses sustained minor damage. A 67 year old male was thrown over 200 feet from his bedroom and suffered broken ribs, a ruptured spleen and a bruised lung. Another person sustained minor injuries. The tornado tore a path over 20 miles long in Lincoln County before dissipating. The maximum width of the tornado was six tenths of a mile (1050 yards) wide. The average width was about 400 yards.



# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

April 10, 2011 Tornadoes

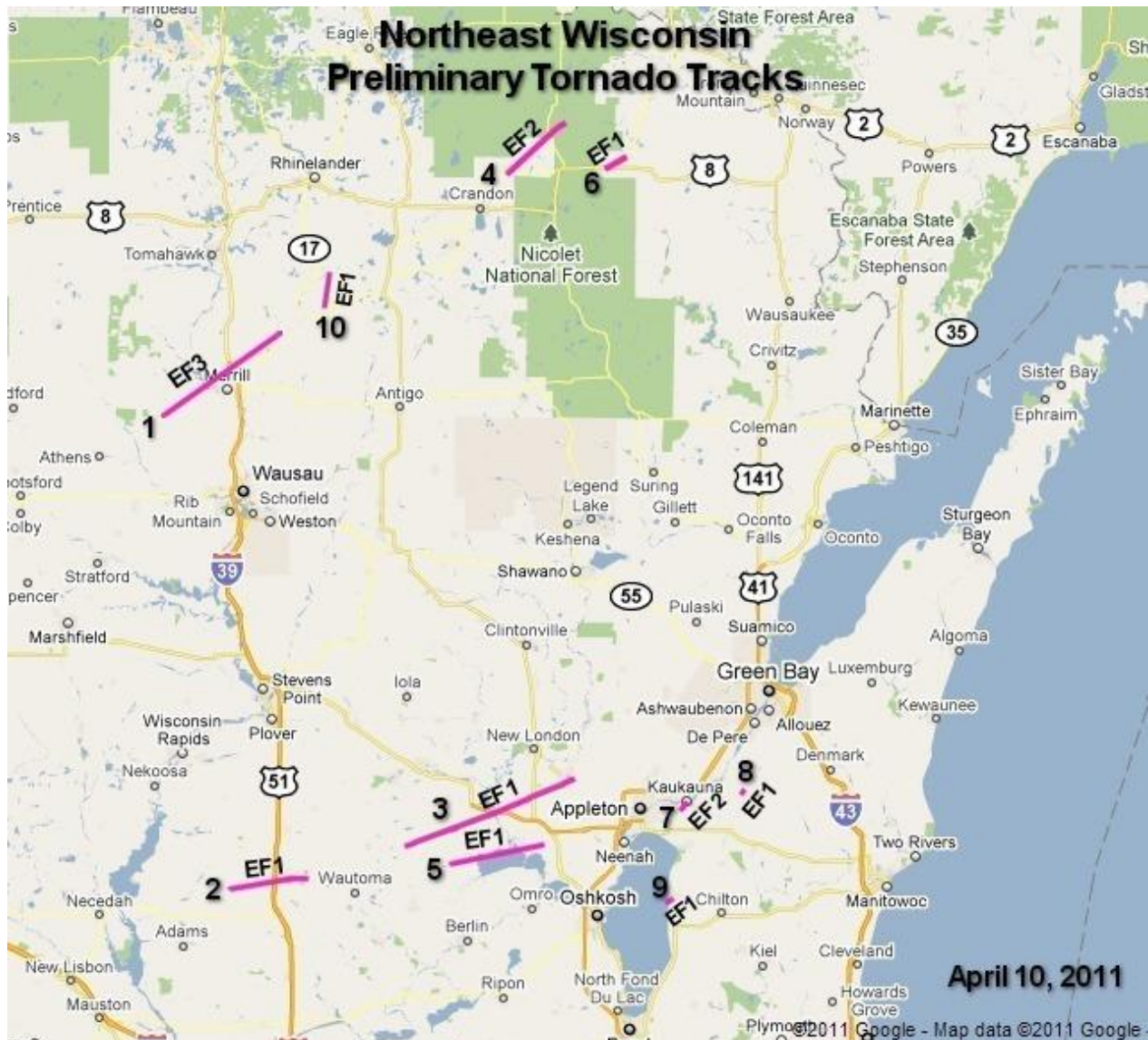


Julia Berg  
Near Merrill, WI



Samual L. Hall  
Northeast of Merrill, WI

## RECORD APRIL 10, 2011 TORNADO OUTBREAK



# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

### Event 6: April 10, 2011

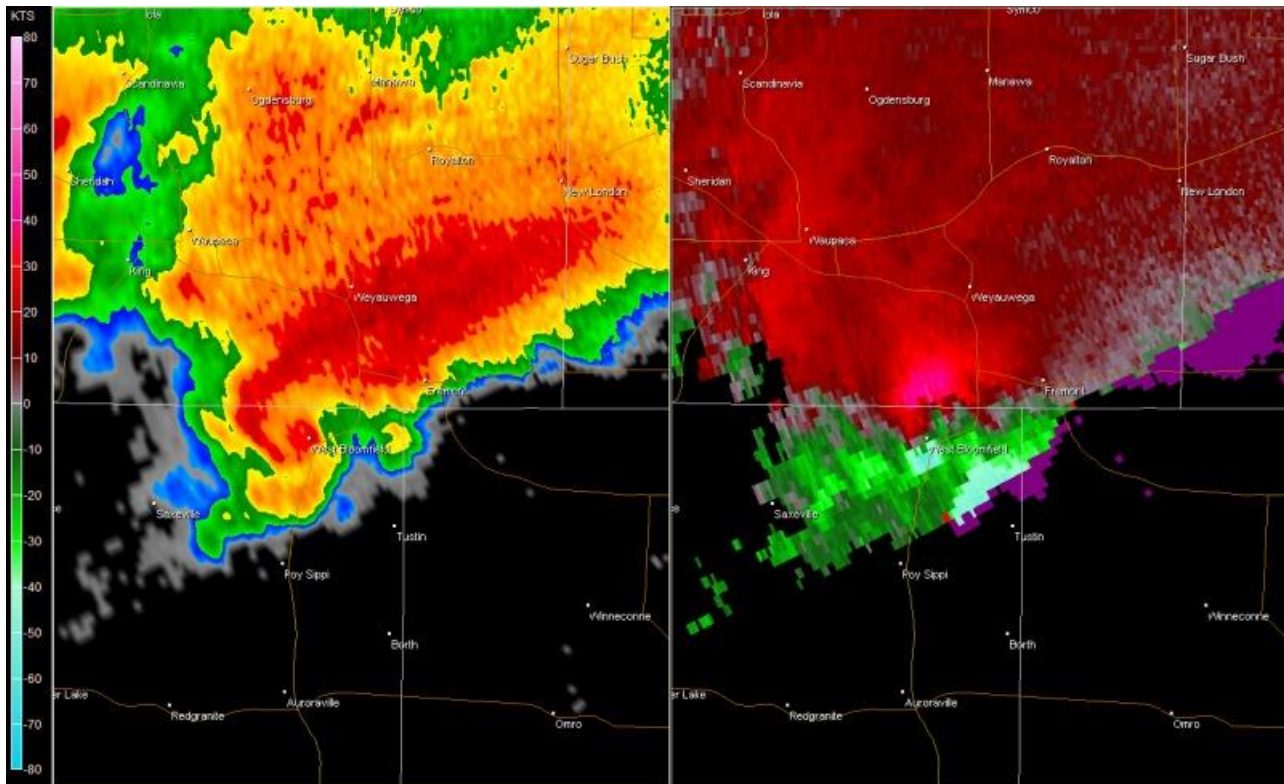
The F/EF-1 tornado moved out of Adams County and entered Waushara County at 5:35 pm CST about 1.8 miles northwest of Coloma. The worst damage occurred just inside the Waushara County line. A mobile home roof was torn off and roof damage was noted to several homes. The average width of the tornado was about 80 yards.

### Event 7: April 10, 2011

The F/EF-1 tornado formed about 5 miles south of Parrish around 5:50 pm CST and moved just east of north for a little over five miles. The tornado affected about 1600 acres of hardwood and softwood trees. It was estimated that over one million trees were snapped, uprooted or suffered serious damage. The loss to timber alone is estimated at over one million dollars. One cabin was destroyed by fallen trees. The tornado was seen by a storm chaser at 5:55 pm CST. The average width of the tornado was 250 yards.

### Event 8: April 10, 2011

The F/EF-1 tornado developed at approximately 6:06 pm CST one mile southwest of Saxeville in Waushara County and moved east-northeast across east-central Wisconsin. Numerous pine trees were snapped or uprooted near the initial point of contact. As the tornado moved into West Bloomfield, several farm buildings were heavily damaged, including a barn that collapsed. The tornado had an average width of 100 yards, but it was not on the ground continuously. The tornado entered Waupaca County at 6:20 pm CST southwest of Fremont. Several farm buildings were impacted by the tornado in addition to many trees. Near Readfield, a barn was lifted and rolled off its foundation. A poorly anchored house roof, which overhung the house walls was completely removed with the debris strewn nearly a quarter of a mile to the northeast. The average width of the tornado was 100 yards. The tornado moved into Outagamie County at 6:32 pm CST. The tornado, which was not on the ground the entire time, damaged a couple of farm buildings just south of Hortonville before it dissipated. One of the buildings lost part of its roof. The average width was 100 yards.





# 2010S TORNADO REFERENCE GUIDE

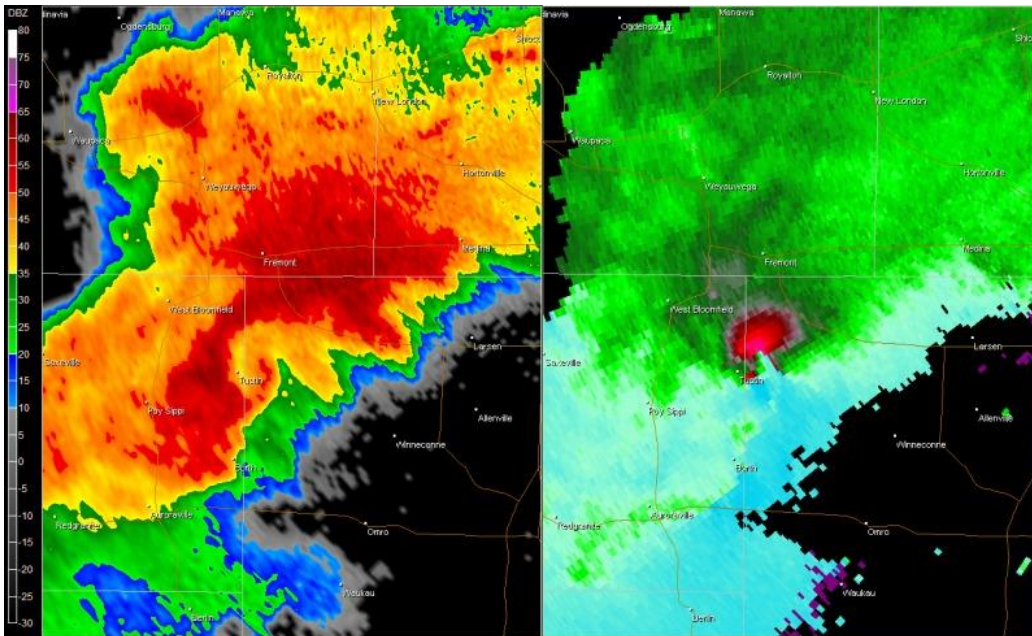
## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

### Event 9: April 10, 2011

The F/EF-2 tornado developed 3.5 miles southeast of Argonne and moved northeast across Forest County. The tornado uprooted and snapped hundreds of trees, some of which fell on vacation cabins along the path of the tornado. The hardest hit area was several miles east Argonne shortly after the tornado developed. A large part of the roof of a house was removed. The tornado continued northeast in Florence County 6:46 pm CST. The average width of the tornado was 250 yards in Forest County. In Florence County, several large tree branches were broken before the tornado dissipated. The average path width of the tornado in Florence County was 75 yards.

### Event 10: April 10, 2011

The F/EF-1 tornado developed 0.3 miles northwest of Poy Sippi, then moved east-northeast over the north shore of Lake Poygan. The tornado then entered Winnebago County at 7:04 pm CST. In Waushara County, the tornado damaged a house and destroyed a barn in the Poy Sippi area. Another barn was flattened near the north shore of Lake Poygan. Many pine trees were uprooted or snapped along the path of the storm. The average path width in Waushara County was 100 yards. In Winnebago County, the tornado moved along the north shore of Lake Poygan, causing most of the damage near Boom Bay on the northeast shore of Lake Poygan. Two homes were heavily damaged as portions of their roofs were partially ripped off. Several other houses sustained lesser damage in this area. In addition, two small mobile homes were rolled on their side and many trees were uprooted or snapped. The tornado dissipated about 2 miles west of Winchester, although damage occurred east and southeast of this location from straight-line thunderstorm winds. The average path width in Winnebago County was 100 yards.



### Event 11: April 10, 2011

The F/EF-1 tornado (2<sup>nd</sup> tornado on this day) formed in Forest County about four miles west of Armstrong Creek at 7:03 pm CST. The tornado snapped and uprooted trees and damaged two houses. One of the houses sustained significant roof damage as the tornado moved across the area. The average width of the tornado was 125 yards.

# **2010S TORNADO REFERENCE GUIDE**

## **GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS**

### **Event 12: April 10, 2011**

The F/EF-2 tornado touched down in the southwest side of Kaukauna near County Road CE at 7:43 pm CST. The tornado cut through the center of a subdivision as it moved north-northeast to near the Fox River before lifting off the ground. Seven homes were destroyed, 24 homes and four businesses sustained major damage and 160 other homes sustained minor damage. Several houses lost large sections of their roofs in the hardest hit area of the city. The average path width was 125 yards.

### **Event 13: April 10, 2011**

A brief F/EF-1 tornado touched down about a mile and a half south of Greenleaf. The tornado damaged the tops of two silos and then ripped the roof off a barn. Average width of the tornado was 75 yards.

### **Event 14: April 10, 2011**

A brief F/EF-1 tornado moved off Lake Winnebago and onshore south of Stockbridge just before 8 pm CST. The waterspout was seen as it moved onshore, damaging two homes. A three season room on one of the houses was ripped off the structure. The tornado moved northeast and tore a section off the roof of a large outbuilding. The tops of trees were snapped in two areas along the path of the tornado. The average width of the tornado was 75 yards.

### **Event 15: May 22, 2011**

A waterspout was observed over Lake Michigan about 5 miles northeast of Algoma.

### **Event 16: May 22, 2011**

The F/EF-1 tornado moved out of Juneau County at 5:03 pm CST and moved across southern Wood County. The storm hit a campground on the east shore of the Wisconsin River about three miles south of Nekoosa. Over 100 pine trees were snapped and uprooted on the campground, some two feet in diameter. Several camper vehicles were damaged by fallen trees. The tornado was seen by campground visitors just before 5:15 pm CST. The tornado continued east-northeast and snapped or uprooted hundreds of additional trees south of Wisconsin Rapids. The storm damaged at least six homes and several other buildings about six miles south-southeast of Wisconsin Rapids. One of the houses lost the entire roof of a garage. A woman was in the garage at the time. She sustained injuries when the garage fell on the truck that she was taking shelter in. This area experienced a high-end F/EF-1 damage with winds at least 95 to 105 mph. The tornado entered Portage County around 5:20 pm CST. The tornado moved across mainly farmland. The twister continued to snap trees and overturn agricultural irrigation systems. About six miles south of Plover, a nearly half-mile long row of power poles were bent over. The tornado crossed Interstate 39 at Coddington Road two miles west of Keene. The tornado grew to nearly 700 yards wide as it passed just north of Keene and heavily damaged a farmstead. A silo was damaged and a barn was flattened. Several outbuildings were also damaged or destroyed. Along the path, at least two dozen irrigation systems were overturned and damaged resulting in over one million dollars in losses. Many hundreds of trees were snapped or uprooted. This area experienced high end F/EF-1 damage with winds of 100 to 110 mph. The tornado dissipated about 9 miles southeast of Plover at 5:46 pm CST. The average width was 300 yards in Portage County.

### **Event 17: August 19, 2011**

The F/EF-1 tornado quickly developed northwest of the city of Wausaukee during the late afternoon and moved southeast for nearly eight miles before dissipating. The twister touched down near Long Lake, snapping or uprooting hundreds of trees as it moved towards Wausaukee. A mobile home near Long Lake was heavily damaged by fallen trees, but the occupants escaped without injury. As the tornado moved into Wausaukee, it leveled another mobile home killing a 46 year old male. Two additional buildings on the property sustained damage including a house that lost part of its roof. Two semi-trailers on the property were blown over. The tornado continued southeast, damaging a baseball field and hundreds of additional trees on the east side of Wausaukee. The tornado reached the Menominee River and briefly crossed into Upper Michigan before moving back into Wisconsin and dissipating near Highway 180. One tree fell on a home near Deer Lane Road.

# **2010S TORNADO REFERENCE GUIDE**

## **GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS**

### **Event 18: August 23, 2011**

The F/EF-0 tornado was witnessed by local law enforcement. The tornado touched down for less than 10 seconds in a corn field. A couple of stalks of corn were thrown in the air, but no damage was reported. The F/EF-0 tornado was estimated to have winds around 60 mph.

### **Event 19: August 23, 2011**

The F/EF-0 tornado touched down near Briarton shortly before 6 pm CST along Shady Road in Shawano County just north of the Outagamie County line. Tall grass and a hay field were flattened in a cyclonic pattern. In addition, about a dozen trees had snapped limbed. Peak winds were estimated at 65 to 70 mph. The average path width was 50 yards.

### **Event 20: August 23, 2011**

The F/EF-0 tornado touched down less than a mile northeast of Sherwood at 8:05 pm CST. The F/EF-0 tornado toppled two trees that damaged the roof of a house and snapped or uprooted six pine trees near Highway M. The tornado continued east-southeast moving over a swamp. Swirl marks were seen in the thick swamp grass. The tornado then hit a farm on Kesler Road. Two old barns were heavily damaged. Peak winds were estimated at 85 mph with an average width of 75 yards.

### **Event 21: May 24, 2012**

The F/EF-0 tornado formed 3.7 miles south southeast of Marathon at 6:01 pm CST and rapidly move northeast before dissipating 4.8 miles east northeast of Marathon at 6:07 pm. About 100 trees sustained large broken branches or were snapped by the tornado. No structures were damaged. The average path width was 50 yards.



# **2010S TORNADO REFERENCE GUIDE**

## **GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS**

### **Event 22: August 9, 2012**

The F/EF-0 waterspout was reported by a trained spotter over Lake Michigan six miles south of Kewaunee between 12:10 pm and 12:20 pm CST. An upper level trough of low pressure rotated through Wisconsin, resulting in numerous showers and thunderstorms. Cold air aloft associated with the trough, coupled with the warm waters of Lake Michigan provided favorable conditions for the development of waterspouts.

### **Event 23: August 9, 2012**

The F/EF-0 waterspout was reported by a trained spotter over Lake Michigan six miles south of Kewaunee between 12:25 pm and 12:35 pm CST. An upper level trough of low pressure rotated through Wisconsin, resulting in numerous showers and thunderstorms. Cold air aloft associated with the trough, coupled with the warm waters of Lake Michigan provided favorable conditions for the development of waterspouts.

### **Event 24: September 18, 2012**

A brief (F/EF-0) waterspout was observed on the waters of the Bay of Green Bay three miles west of Sister Bay around 5:01 pm CST. The time of the event was estimated based on the time of 911 calls. A strong upper level trough and cold air aloft produced conditions favorable for waterspout formation on the waters of Green Bay.

### **Event 25: July 9, 2013**

A tornado (F/EF-0) touched down 0.5 NE of Schultz, or about six miles south of Irma in Lincoln County at 1:59 pm CST. The tornado moved east for about 4.1 miles and was 100 yards wide (average width was 75 yards). A few trees and power lines were knocked down. The tornado dissipated 3.9 miles west of Bloomville at 2:04 pm CST.

### **Event 26: July 9, 2013**

A tornado (F/EF-0) touched down 10.8 miles south of Parrish in Langlade County (near the Lincoln / Langlade County line) around 2:32 pm CST. The tornado traveled east for about nine and a half miles, although the tornado track was not continuous. The maximum width of the tornado was 100 yards, with an average width of 75 yards. The tornado damage was to trees and tree limbs. The tornado dissipated 3.1 miles west of Deerbrook at 2:56 pm CST.

### **Event 27: July 9, 2013**

A tornado (F/EF-0) touched down 4.2 miles south of Bancroft in Portage County around 4:44 pm CST in an open field just west of Interstate 39. The tornado was observed by a storm spotter and did no damage. The maximum width was 25 yards and traveled less than two tenths of a mile before dissipating at 4:45 pm CST.

### **Event 28: July 9, 2013**

A tornado (F/EF-0) touched down about four and a half miles north northeast of Oconto in Oconto County at 6:40 pm CST. The tornado was observed by an eyewitness just east of Highway 41 near Swede Town Road and County Road A. The tornado moved east for about a mile and half toward the bay before dissipating at 6:54 pm CST. Dozens of trees were snapped and uprooted, and also blew over a recreational vehicle trailer along its path. The maximum width of the tornado was one hundred yards with an average width of seventy-five yards.



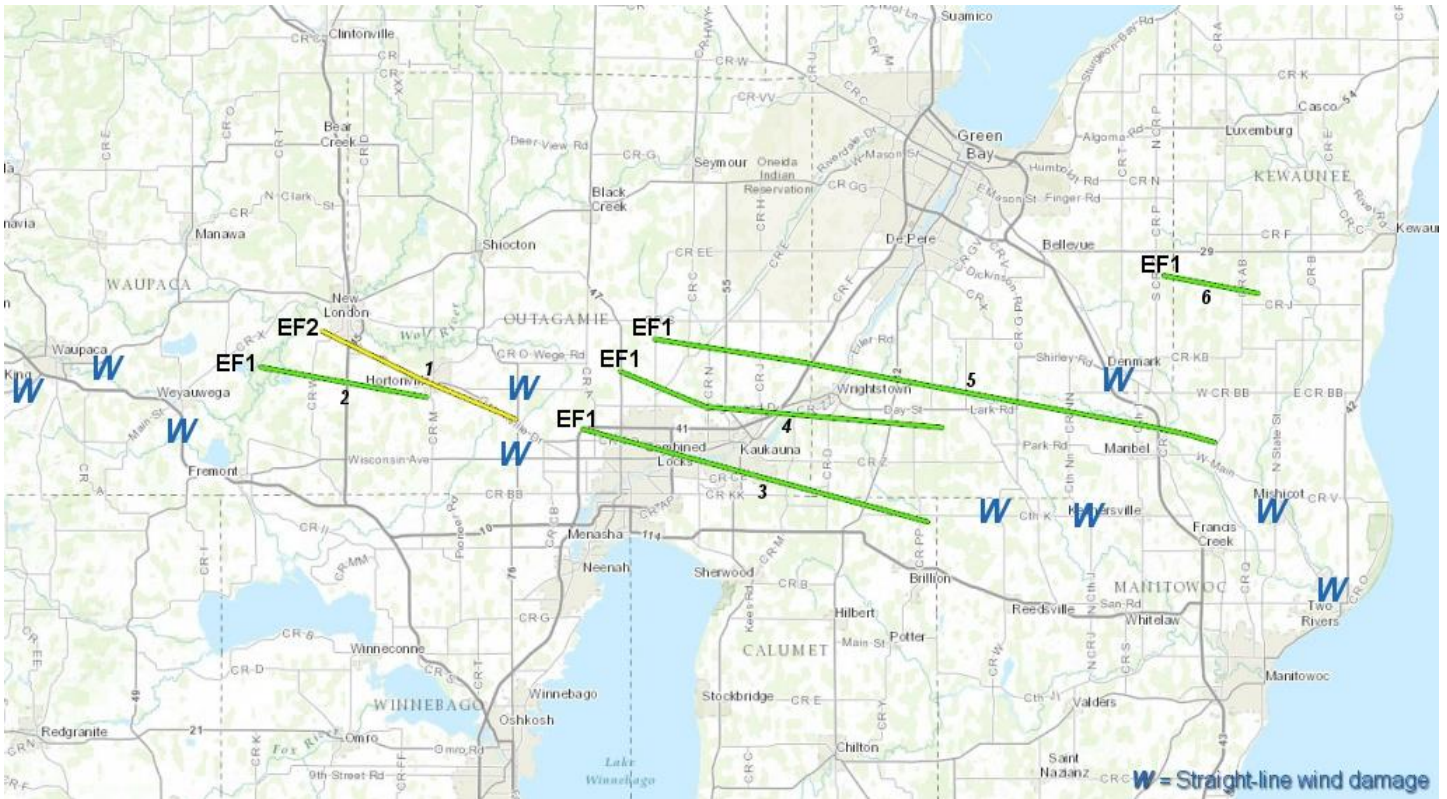
# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

### TORNADO REFERENCE GUIDE - CHRONOLOGICAL ORDER

#### GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

Rare Late Evening / Early Morning Tornadoes on August 6-7, 2013



#### Event 29: August 6, 2013

The first of six late night tornadoes to strike Northeast Wisconsin on this date, The (F/EF-0) tornado touched down four miles north northeast of Partridge Lake in Waupaca County at 11:22 pm CST. The tornado was travelling at a rate of 60 to 70 mph. The tornado hit a campground, blowing several camper trailers over. Two people sustained minor injuries at the campground. Over one hundred trees were snapped or uprooted along the path in Waupaca County. The tornado moved into Outagamie County about 3.1 miles south of New London at 11:26 am CST. The tornado damaged or uprooted trees as it moved across Outagamie County. Based on radar analysis, the circulation of this tornado may have merged with the other tornado that was occurring concurrently in the county near Hortonville. The tornado travelled 9.8 miles before dissipating eight tenths of a mile west southwest of Hortonville at 11:30 pm CST. The maximum width of the tornado in Outagamie and Waupaca Counties was 125 yards, with an average width of 75 yards in both counties.



# **2010S TORNADO REFERENCE GUIDE**

## **GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS**

### **Event 30: August 6, 2013**

The second of six late night tornadoes to strike Northeast Wisconsin on this date, the (F/EF-2) tornado touched down 1.2 miles west of New London in Waupaca County at 11:24 pm CST. The tornado was travelling at a rate of 60 to 70 mph. The tornado struck a church (figure 1 below), causing severe damage. A large portion of the roof collapsed, causing failure to two walls. A wall on the new portion of the church was pushed in. In addition, hundreds of trees were snapped or uprooted. Several homes along the path sustained damage, mainly from fallen trees. The average path width in Waupaca County was 100 yards with a maximum width of 175 yards. The tornado now an EF-1 entered Outagamie County at 11:25 pm CST a little over a mile southeast of New London, damaging or uprooting hundreds of trees along the path. Several homes in a two block area of Hortonville were damaged (roof and siding) by falling trees. The average path width was 100 yards with a maximum width of 175 in Outagamie County. The tornado traveled 13.1 miles before dissipating four tenths of a mile west southwest of Greenville.



Figure 1: Church (southeast New London damaged by a tornado. Peak winds were estimated at 115 to 120 mph.

### **Event 31: August 6, 2013**

The third of six late night tornadoes to strike Northeast Wisconsin on this date, the (F/EF-1) tornado touched down four tenths of a mile west of Mackville in Outagamie County at 11:38 pm CST. The tornado was travelling at a rate of 60 to 70 mph. The tornado caused a barn to collapse, and heavily damaged a boat showroom in Little Chute. Another barn lost part of its roof northwest of Kaukauna. Damage to trees was sporadic as it moved through Outagamie County. The maximum width of the tornado in Outagamie County 175 yards, with an average width of one hundred yards. The tornado moved into southern Brown County, about two miles southwest of Wrightstown around 11:48 pm CST. In Brown County, the tornado uprooted or snapped dozens of trees as it moved east, just south of Greenleaf. A house lost an attached garage when winds blew in the garage door and caused a large portion of the garage roof to lift off. The walls of a nearby building collapsed. The maximum width of the tornado in Brown County was 175 yards and average width was 125 yards. The tornado travelled 19.2 miles before dissipating 2.7 miles west of Morrison at 23:53 pm CST.

# **2010S TORNADO REFERENCE GUIDE**

## **GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS**

### **Event 32: August 6, 2013**

The fourth of six late night tornadoes to strike Northeast Wisconsin on this date, the (F/EF-1) tornado touched down three and a half miles east of Greenville in Outagamie County at 11:38 pm CST. The tornado was travelling at a rate of 60 to 70 mph as it moved across northern portions of Appleton, Kimberly and Kaukauna. The tornado caused some roof damage to the Northland Mall and caused roof and window damage to two small retail buildings. The storm then knocked over four wood electrical poles and uprooted or heavily damaged hundreds of trees in a nearby neighborhood. Although houses in the area sustained relatively minor wind directly, fallen trees caused considerable collateral damage to roofs, siding and vehicles. The maximum width of the tornado in Outagamie County was 150 yards, with an average width of 125 yards. The tornado (EF-1) entered Brown County a little over a mile west of Holland around 11:49 pm CST. A few trees were knocked over by the tornado. The average path width in Brown County was 150 yards. The tornado (EF-1) moved into Calumet County 1.6 miles northwest of Forest Junction around 11:50 pm CST. In Calumet County, the tornado damaged about three dozen trees. Two metal truss towers collapsed under the weight of several high voltage power lines which were likely moving in unison as their resonance frequency was reached. Engineers inspected the damaged estimated winds around 100 mph. The maximum width in Calumet County was 175 yards with an average width of 125 yards. The tornado travelled 20.7 miles before dissipating a little over two and a half miles north northeast of Brillion around 11:52 pm CST.

### **Event 33: August 6, 2013**

The fifth of six late night tornadoes to strike Northeast Wisconsin on this date, the (F/EF-1) tornado touched down 2.7 miles east northeast of Mackville in Outagamie County at 11:40 pm CST. The tornado was travelling at a rate of 60 to 70 mph as it moved across the Fox Valley. The tornado caused significant damage to several outbuildings and barns and flattened sections of mature corn fields. The roof of a power substation was damaged. The maximum path width was 200 yards, with an average width of 150 yards. The tornado now an EF-0 moved into Brown County just under two miles northwest of Wrightstown near Highway 41 around 11:48 pm CST. The tornado first hit the Apple Creek Campground, snapping fifty trees and knocking over two camping trailers. As the tornado moved across southern Brown County, at least seventy homes sustained at least minor damage, many from fallen trees. A large free standing garage was heavily damaged when the tornadic winds blew in two garage doors, causing the roof to be ripped off. The maximum width of the tornado in Brown County was 250 yards, with an average width of 175 yards. The tornado moved into Manitowoc County 4.1 miles northwest of Rosencrans around 12:01 am CST. The tornado strengthened to an EF-1 in Manitowoc County. The tornado damaged several outbuildings and a roof of a barn. A 110 year old stone structure at the Maribel Caves County Park was knocked over by the strong winds. The damage survey revealed the tornado ended a couple miles east of Maribel, but straight-line wind damaged continued into the east part of the county. The tornado in Manitowoc County has a maximum width of 250 yards and average width of 125 yards. The tornado travelled thirty-three miles across three counties before dissipating.

### **Event 34: August 7, 2013**

The last tornado of the night to strike Northeast Wisconsin on this date, the (F/EF-1) tornado touched down a half mile south southeast of Henrysville in Brown County around 12:05 CST. The tornado was travelling at a rate of 60 to 70 mph as it moved across the region. A couple dozen trees were damaged or uprooted. In Brown County, the maximum width of the tornado was one hundred yards with an average width of seventy-five yards. The tornado (EF-1) moved into Kewaunee County about three miles southwest of Pilsen around 12:06 am CST. The tornado caused the walls and roof of a barn to collapse and damaged two silos. The tornado also uprooted several dozen trees along its path. In Kewaunee County, the maximum width of the tornado was 100 yards with an average width of seventy-five yards. The tornado travelled 5.6 miles before dissipating one mile northeast of Stangelville around 12:10 am CST.

# 2010S TORNADO REFERENCE GUIDE

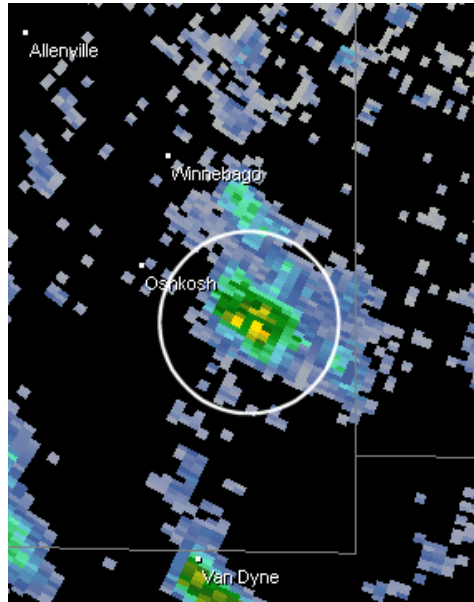
## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

### Event 35: July 27, 2014

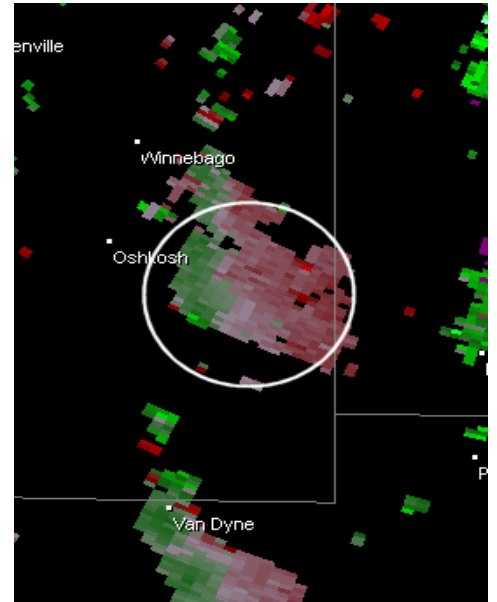
A very weak and brief waterspout formed around 6:05 pm CST under a rain shower over southern Lake Winnebago, about 5 miles southeast of Oshkosh. The waterspout (photo below) was on the water for a just a few seconds and then dissipated. The parent funnel was seen by hundreds of people across the area. No damage occurred.



Photograph submitted to NWS.



Radar image: Green Bay radar.



Velocity image: Green Bay radar.

### Event 36: August 18, 2014

A tornado developed around 3:23 pm CST, causing minor damage as it moved east near Shady Lane a little over three miles northeast of Winchester in northern Winnebago County. The weak tornado EF-0 caused two single wood power poles to partially lean in saturated soil and knocked over a few trees and limbs. Swirl marks could be seen in a field of tall grass. The tornado was not in contact with the ground during the entire path length (a little over two miles). The maximum width of the tornado was 50 yards with estimated winds of 65 to 75 mph before dissipating around 3:25 pm CST.

### Event 37: May 17, 2015

The F/EF-0 tornado touched down at 2:31 pm CST just over a mile and a half west-southwest of Morgan in Shawano County. The tornado produced intermittent damage along a nearly five mile long path, dissipating at 2:40 pm CST just over three miles northeast of Morgan. At least a dozen trees along the path sustained damaged and a barn lost several shingles. The tornado had a maximum width of 75 yards.

### Event 38: June 15, 2015

A weak F/EF-0 tornado touched down at 2:31 pm CST a mile and a half north-northwest of Glenmore in Brown County. The tornado traveled just over a quarter of a mile and was 25 yards wide before the tornado dissipated 1.4 miles north-northwest of Glenmore. A swing set was toppled and a small metal shed was pushed twenty feet.



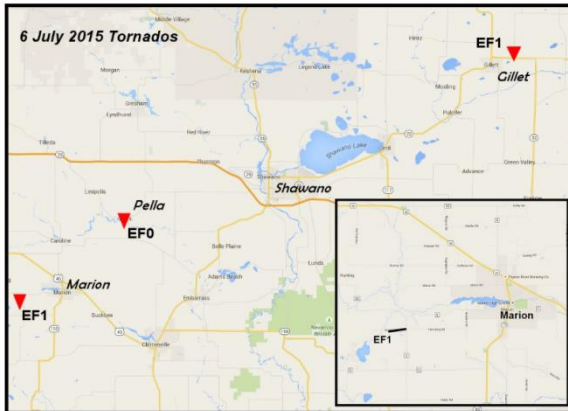
# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

### Event 39: July 6, 2015

An F/EF-0 tornado touched down at 2:31 pm CST 3.4 miles west of Marion (see map next page) in Waupaca County. The tornado travelled three quarters of a mile and had a maximum width of 75 yards wide before dissipating 2.7 miles west of Marion at 2:40 pm CST. The tornado heavily damaged a barn and adjacent garage. The roof of a nearby house was damaged and winds of another home were broken. At least two dozen trees were uprooted or snapped. The average path width was 50 yards.

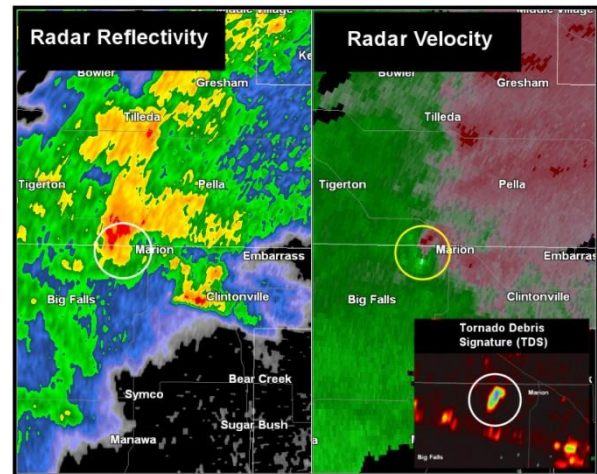
This was one of three tornadoes that touched down in northeast Wisconsin on this date. What was unusual about this event was there was no thunder noted with the tornadoes (very rare!). The radar image shows in the intense rotation west of Marion.



*Preliminary Tornado Map (above). Red triangles denote approximate location of brief tornado touchdowns. Inset above denotes the location of the EF1 tornado west of Marion, Wisconsin.*

Tornado	Begin	End	Path
Marion EF1	4:38 PM, 3 W Marion	4:40 PM, 2.6 W Marion	Length: 0.4 mi Width: 75 yards
Pella EF0	5:03 PM, 2 E Pella	5:03 PM, 2 E Pella	Length: 0.1 mi Width: 25 yards
Gillett EF1	5:56 PM, 2 E Gillett	6:03 PM, 3 ENE Gillett	Length: 2.2 mi Width: 50 yards

The first tornado developed just ahead of the main line of showers over northern Waupaca County. This storm quickly attained supercell characteristics and generated a brief EF1 tornado about three miles west of Marion in extreme northern Waupaca County (see map insert above and radar images below).



*Radar reflectivity (above Left) and radar velocity (above right) around time of the EF1 tornado west of Marion. Inset in the above image is the dual polarization correlation coefficient (CC) product denoting the location of debris produced by the tornado.*

Here are some damage photos from the Marion tornado:



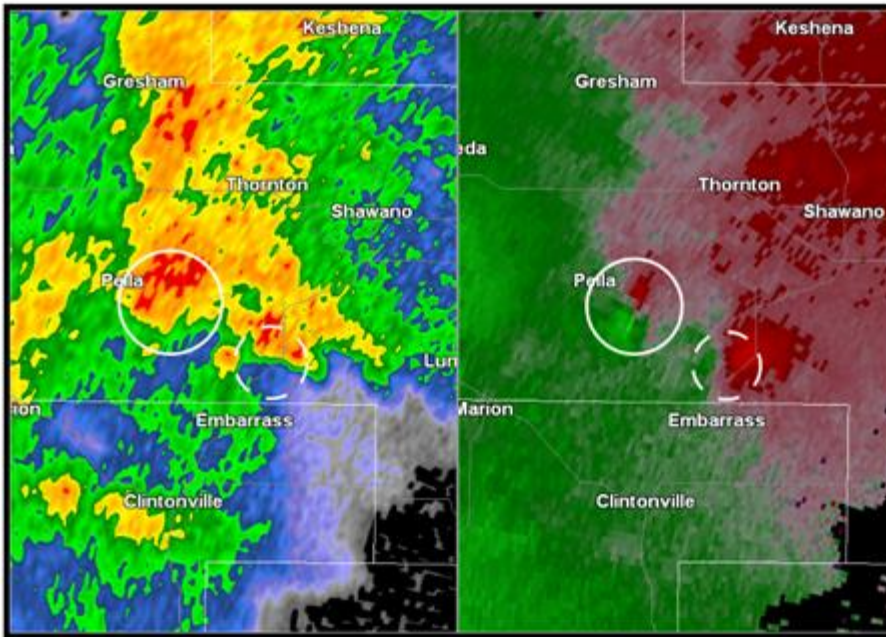
# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

### Event 40: July 6, 2015

An F/EF-0 tornado touched down at 4:03 pm CST just over a mile east of the Pella Airport in Shawano County. The tornado travelled nearly a tenth of a mile and was 25 yards wide before dissipating at 4:04 pm CST. The tornado tore off part of a barn and sent wooden pallets into a nearby field.

As this cell continued to move northeast into Shawano County, it produced another very weak tornado (EF0) that briefly touched down near Pella in central Shawano County around 5 pm CDT (denoted by the white circle in the image below). The dashed circle in the image below denotes a new circulation associated with a different cell that was developing to the southeast of the Pella (just north of Embarrass).



Radar reflectivity (above left) and velocity image (above right) associated with brief tornado touchdown near Pella (denoted by solid circle in the image above). Dashed circle denotes a new circulation that eventually produces a tornado near Gillett about 50 minutes later.

Here are some damage photos from the Pella tornado:





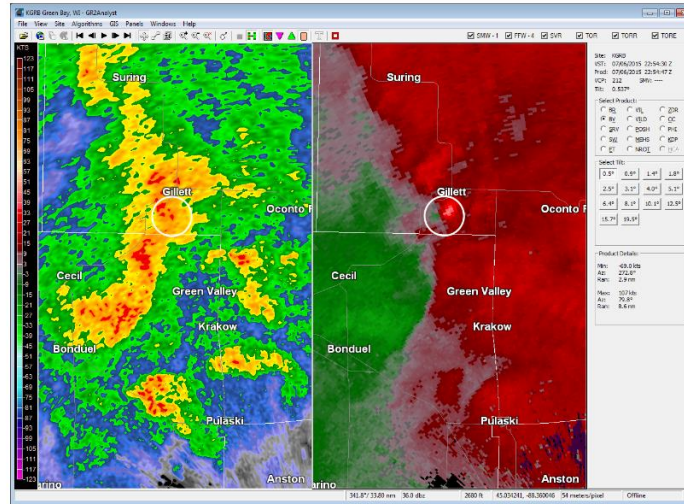
# 2010S TORNADO REFERENCE GUIDE

## GREEN BAY FORECAST AREA TORNADOES / WATERSPOUTS

### Event 41: July 6, 2015

An F/EF-0 tornado touched down at 4:56 pm CST 2.2 miles east-northeast of Gillett in Oconto County. The tornado travelled two and a quarter miles and was 50 yards wide before dissipating 2.6 miles south-southwest of Kelly Brook at 5:03 pm CST. The tornado uprooted or snapped at least twenty trees and caused minor damage to a house.

This new cell north of Embarrass continued to organize and strengthen and eventually produced an **EF1** Tornado near Gillett in western Oconto County around 555 pm CDT (*see image below*).



Radar reflectivity (above left) and velocity (above right) denoting the location of the storm that produced an EF1 tornado near Gillett around 555 pm CDT.

Here are some damage photos from the Gillett tornado:

